REMARKS

Claims 1-20 are currently pending in the present application. Claims 11-20 are new. No new matter has been added.

Claims 1 and 10 were objected to for recitation of the feature "the space point." Claims 1 and 10 have been amended which should obviate this objection.

Claims 4-6 were rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which application regards as the invention. One of ordinary skill in the art would understand punctiform to mean having the form of a point. See, e.g., Webster's Revised Unabridged Dictionary © 1998.

Claims 1-3 and 7-10 were rejected under 35 U.S.C. 102(b) as being anticipated by Kenneth R. Hoffmann, Andreas Wahle, Claire Pello-Barakat, Jack Sklansky & Milan Sonka, "Biplane X-ray Angiograms, Intravascular Ultrasound, and 3D Visualization of Coronary Vessels" International Journal of Cardiac Imaging, Dordrecht, NL, Vol. 15, No. 6 Dec. 1999 Pertinent Pages 495-512.

Claims 1-3 and 7-9 include the feature of the space point being reconstructed by evaluating other image points of the further projection images that lie on a respective epipolar line of the reference point, and the gray scale values corresponding to the other image points being projected on a projection line of the reference point and added to form a sum profile. Claim 10 includes the feature of the space point being determined based on image intensity of other image points of the further projection images that lie on a respective epipolar line of the reference point. Hoffmann is directed to the calculation of the imaging geometry and the 3D position of the vessel centerlines of the vascular tree from biplane views without a calibration object, i.e., from the images themselves, in combination with intravascular ultrasound images.

Hoffmann describes an epipolar-line technique for projecting a line into a second image where the point in the second image that corresponds to the point in the first image must lie along the projected line. (Hoffmann p. 498). Hoffmann describes using this epipolar-line technique for each point along the centerline of the vessel at page 498:

> With the corresponding points in the two angiograms known and the imaging geometry known, the intersection in 3D space of the lines connecting the image points and their corresponding focal spots is taken as the 3D position of the point that corresponds to the two image points; i.e., triangulation is used. Thereby, the 3D centerline of a vessel is constructed by successively performing these steps for each point along the vessel centerline. Proceeding vessel by vessel in this manner, the 3D positions of the entire vascular tree are calculated.

Hoffmann does not disclose or suggest the features of claims 1-3 and 7-9 including the space point being reconstructed by evaluating other image points of the further projection images that lie on a respective epipolar line of the reference point, and the gray scale values corresponding to the other image points being projected on a projection line of the reference point and added to form a sum profile or the features of claim 10 including the space point being determined based on image intensity of other image points of the further projection images that lie on a respective epipolar line of the reference point.

Claims 4-6, as well as claims 11-19, depend from claims 1 and 10, respectively, and thus are also patentable over Hoffmann.

Claim 20 includes the features of determining image intensity of image points of the further projection images that lie on the epipolar lines and determining a space point corresponding to the reference point of the spatial structure from a summation of at least a portion of the image intensities. As described above, Hoffmann utilizes an epipolar-line technique, but does not disclose these features of claim 20.

In view of the foregoing, Applicants respectfully submit that the specification, the drawings and all claims presented in this application are currently in condition for allowance. Accordingly, Applicants respectfully request favorable consideration and that this application be passed to allowance.

Should any changes to the claims and/or specification be deemed necessary to place the application in condition for allowance, the Examiner is respectfully requested to contact the undersigned to discuss the same.

Respectfully submitted,

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